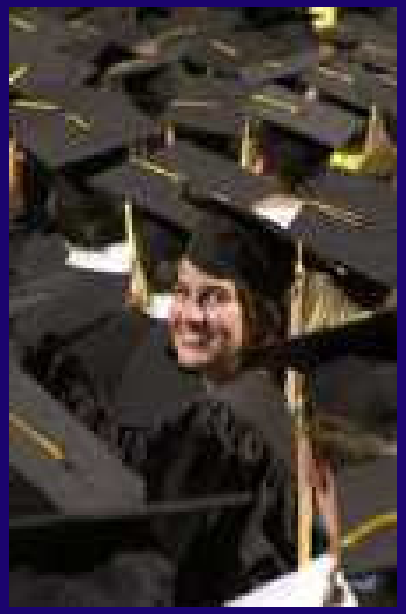
Georgia Tech: Why is good leadership essential?

President G. Wayne Clough

Administrative Retreat

August 19, 2004

Looking back one year



Incoming freshmen

- ⇨2,600 students (+18%)
  - →782 women (+28%)
  - →153 African Americans (+21%)
  - →105 Hispanics (+48%)
  - →116 international (+35%)
- ⇨1337 average SAT
- ⇨8 perfect SATs, 1 perfect ACT
- ⇨5 sets of twins

Serving students

SpeakUp survey:
Students value the rigor and challenge of Tech's academic programs, but would like faculty to be more consistent in adhering to the "best practices" of teaching.

Students shine

GT Motorsports wins Formula SAE in Australia

Goldwater Scholarships:
Thomas Oliver
Mark Callaghan

Laurence Ralph, Mellon Fellowship in Humanistic Studies

Gabe Brostow, Marshall Sherfield Fellowship

Monique Gupta, Churchill Scholarship

Jia Xu, Marshall Scholarship

Faculty honored

National Medal of Technology: Russell Dupuis, elec and comp engineering

Presidential Early Career Award for Scientists and Engineers: Julia Kubanek, biology

National Academy of Engineering: Fred Juang, elec and computer eng, and Jeff Wu, industrial/systems eng

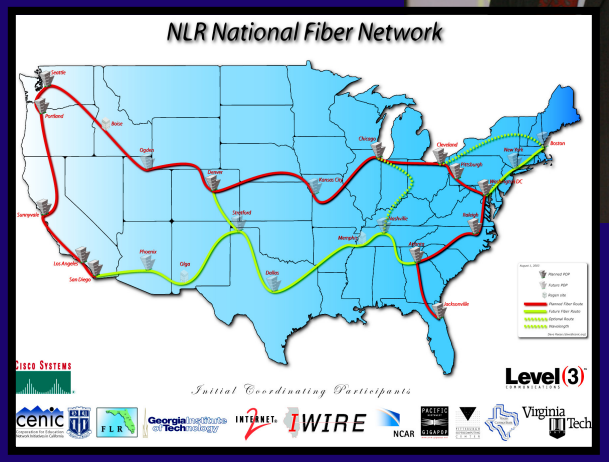
Presidential Green Chemistry Challenge Award: Charles Eckert, chemical & biomolecular engineering, and Charles Liotta, chemistry

Rankings remain high

- ⇨ Engineering holds at #5
  - → Industrial/systems engineering #1 for 14th consecutive year
  - → Biomedical engineering jumps up to #2
  - → Aerospace, civil, electrical, environmental and mechanical engineering also in top 10
- ⇨ College of Management climbs to #42, tied with UGA's Terry School of Business
- ⇨ Public Policy's information and technology management program ranks #8

Research: New milestones

- ⇨Awards: $342 million
- ⇨Expenditures: ~$425 million
- ⇨Invention disclosures: 277
- ⇨NIH: $17.2 million (doubled in past 2 years)
- ⇨Interdisciplinary research: $106.8 million in active contracts with inter-disciplinary centers



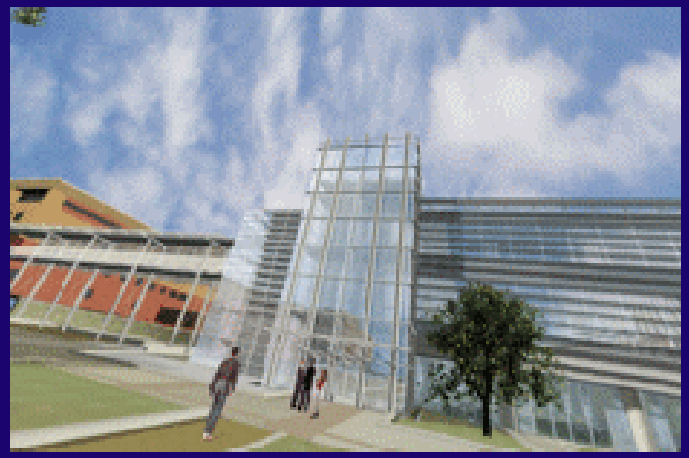
Tech's national presence

- ⇨National Innovation Initiative
- ⇨Sam Nunn Policy Forum on Bioterrorism
- ⇨National Lambda Rail
- ⇨National Nanotech Infrastructure Network

Construction continues

Campus Rec Center

Student Center Commons



Klaus Advanced Computing Building

Molecular Science and Engineering Building

It can be done

5 teams in the top 10 for their sport.
15 of 17 teams in post-season play.
Lacrosse, rowing clubs go national.

First basketball team from Georgia to play in national championship game.

Volleyball team finished its season ranked 8th in the nation.

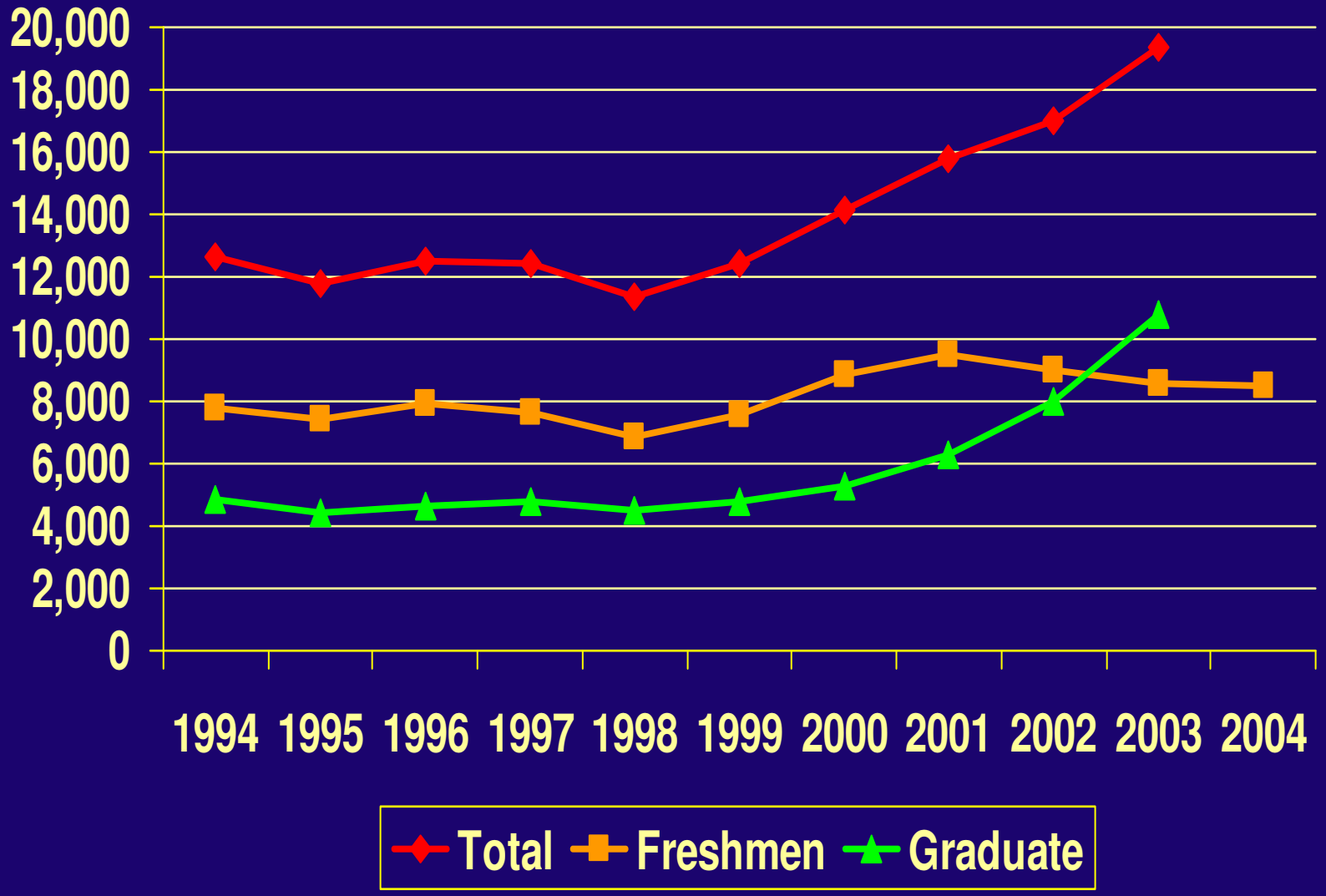
Baseball team won 20 straight, became NCAA Atlanta Region Champs.

SACS accreditation: Review under way

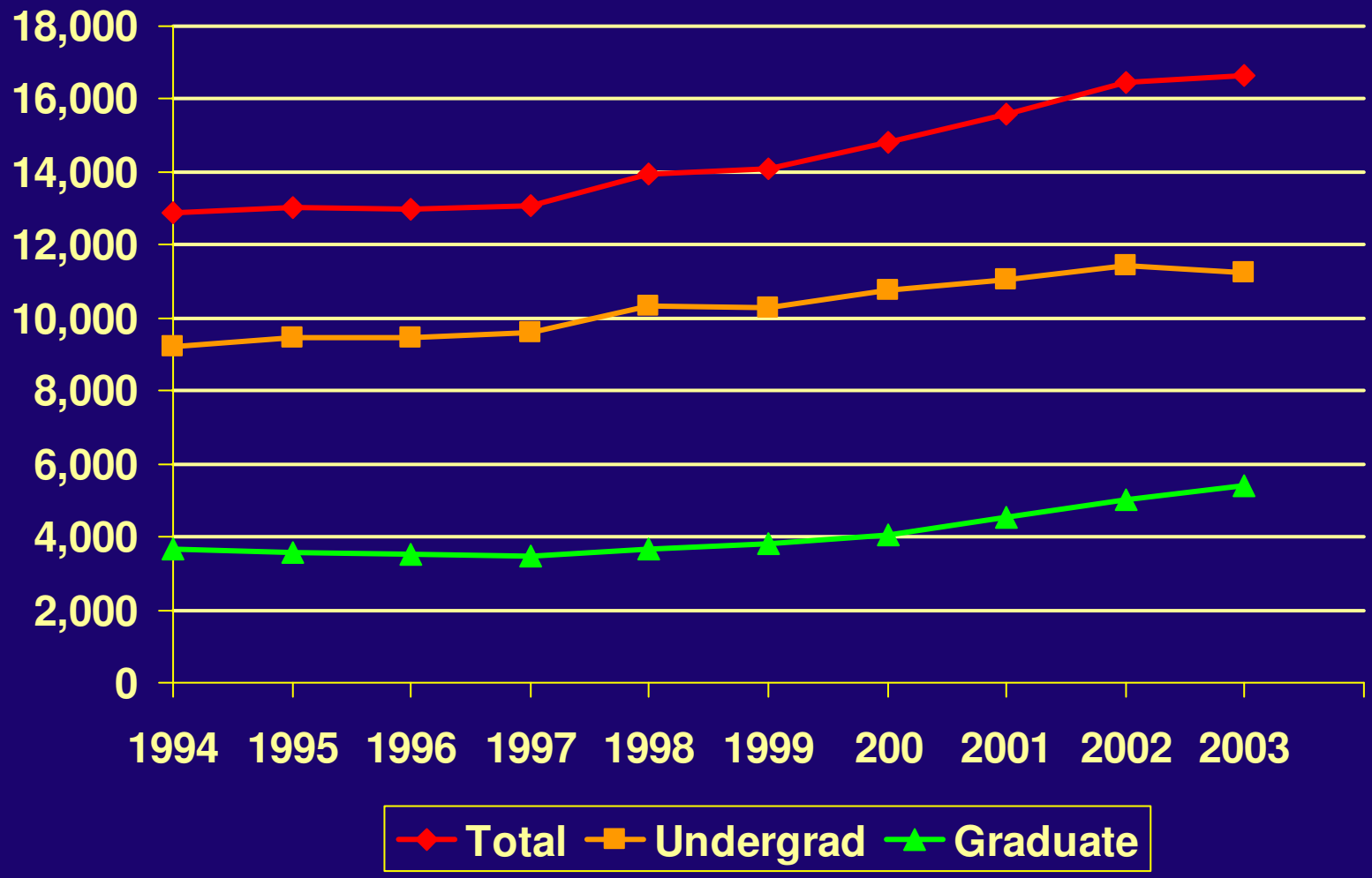
Jack Lohmann, associate provost, College of Engineering, is coordinating the large-scale Institute-wide effort to renew accreditation. Preparations have been under way for more than a year.

Looking back 10 years

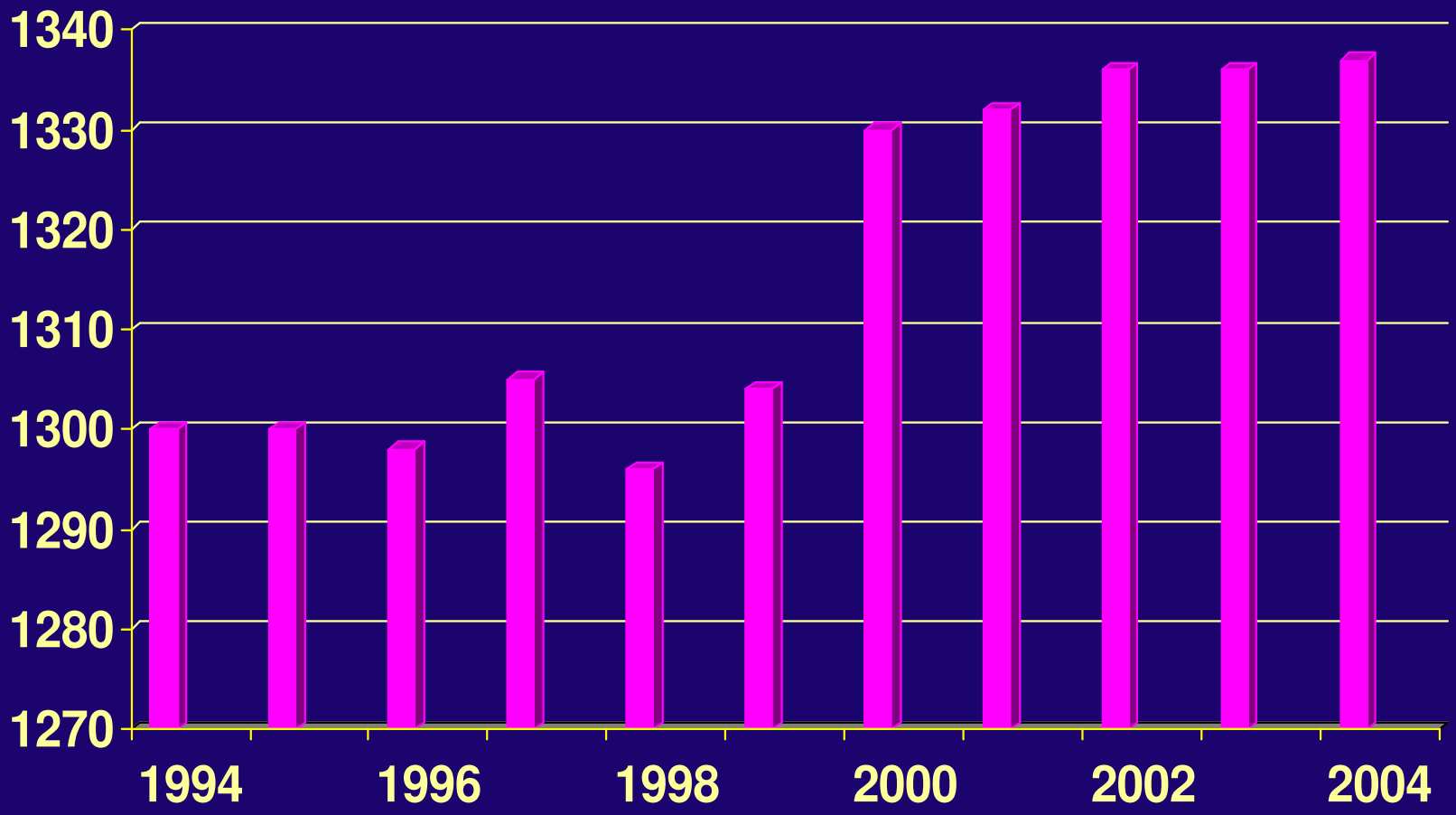
Applications



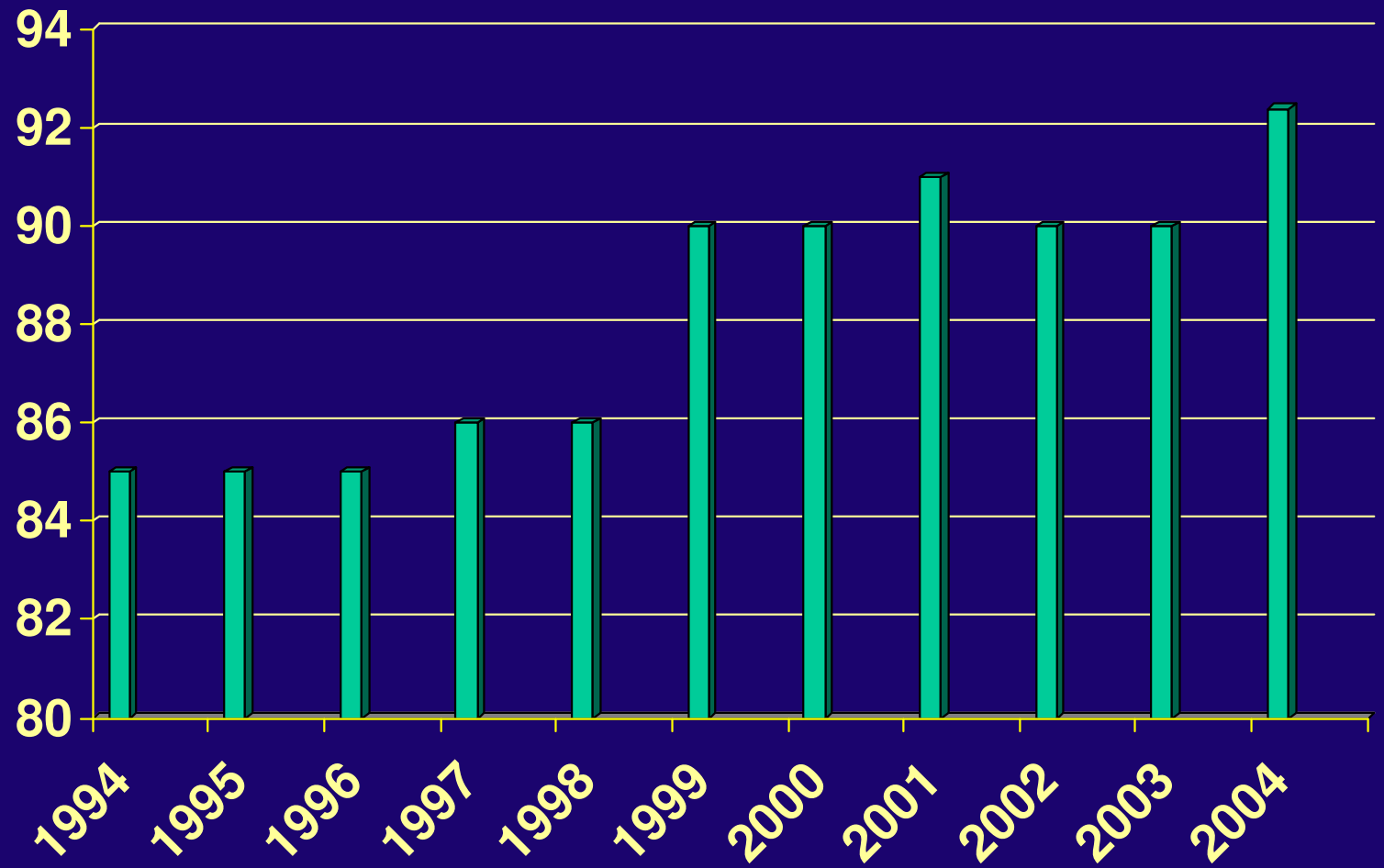
Fall enrollment



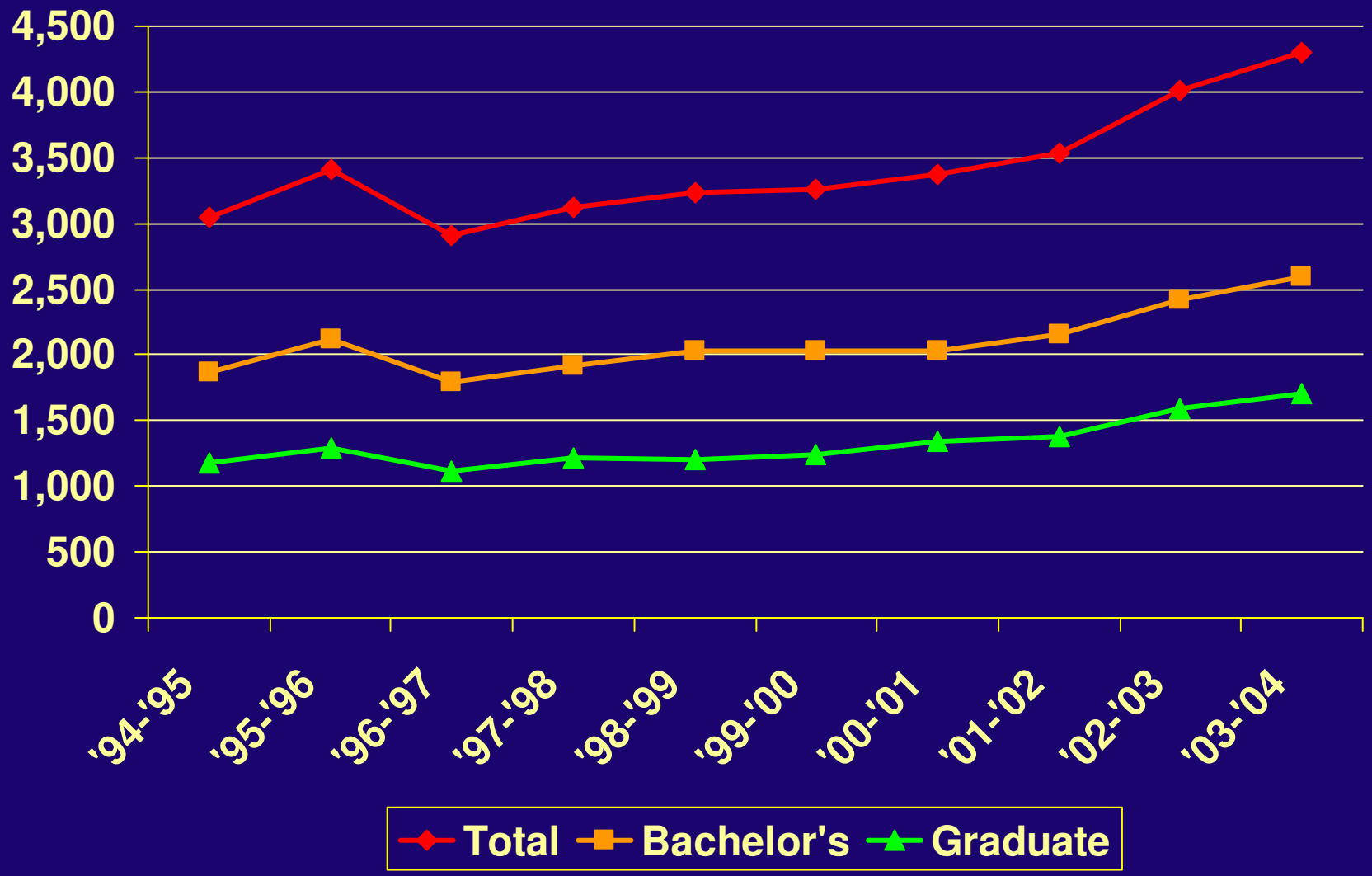
Average freshman SAT



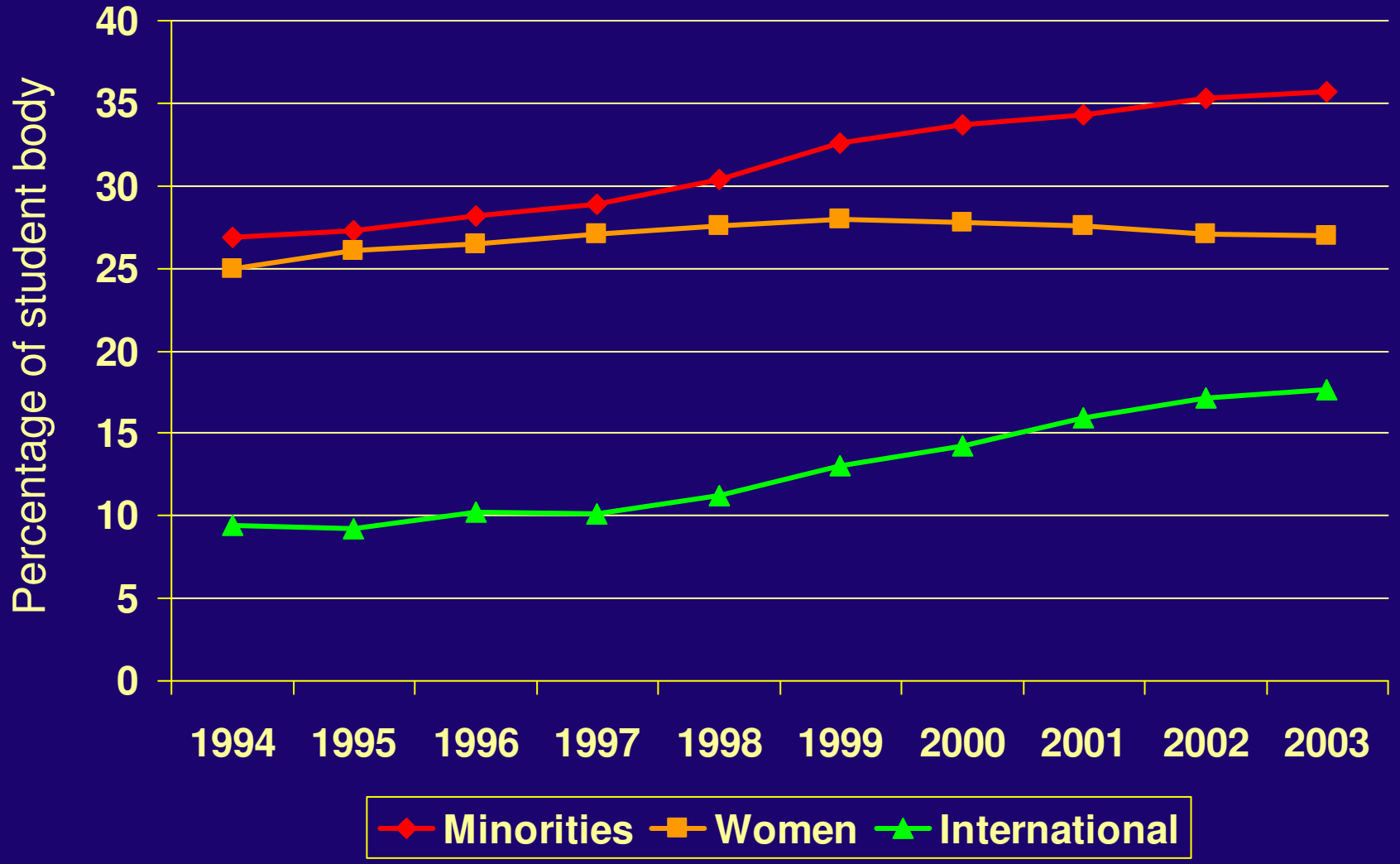
First-year retention



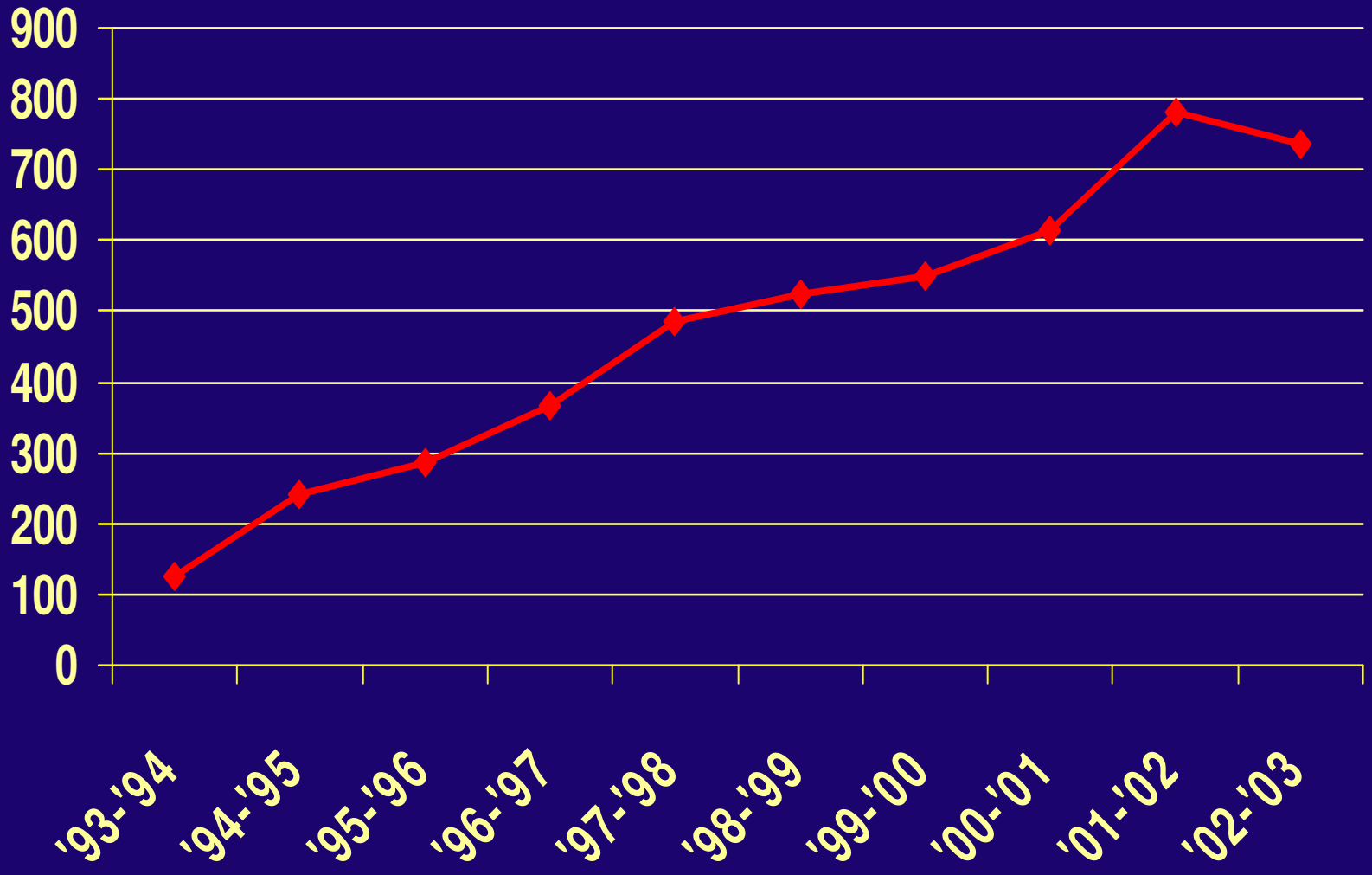
Degrees awarded



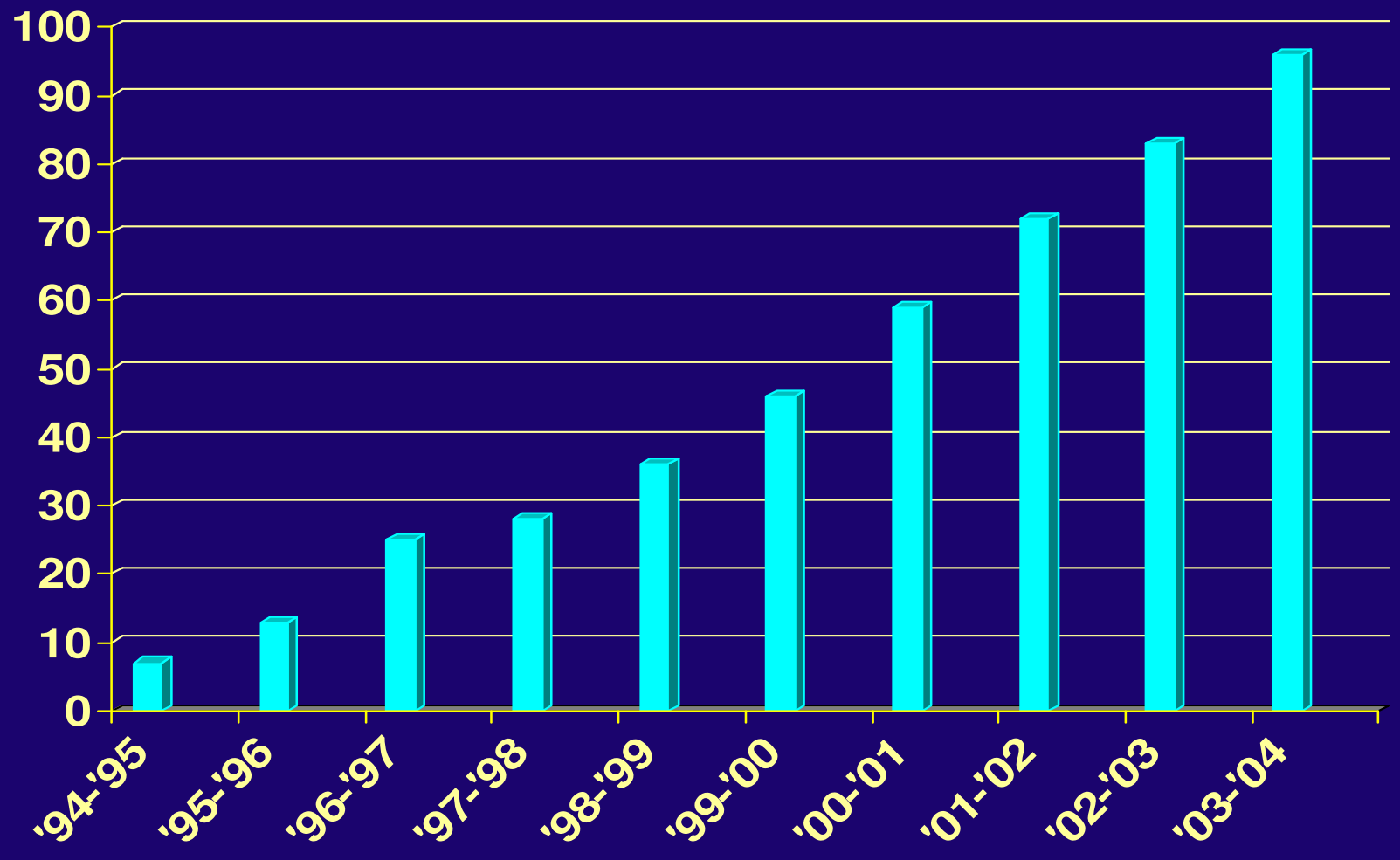
Building diversity



Students studying abroad



CAREER Awards



Faculty honors

Endowed chairs

1995: 36

2004: 114

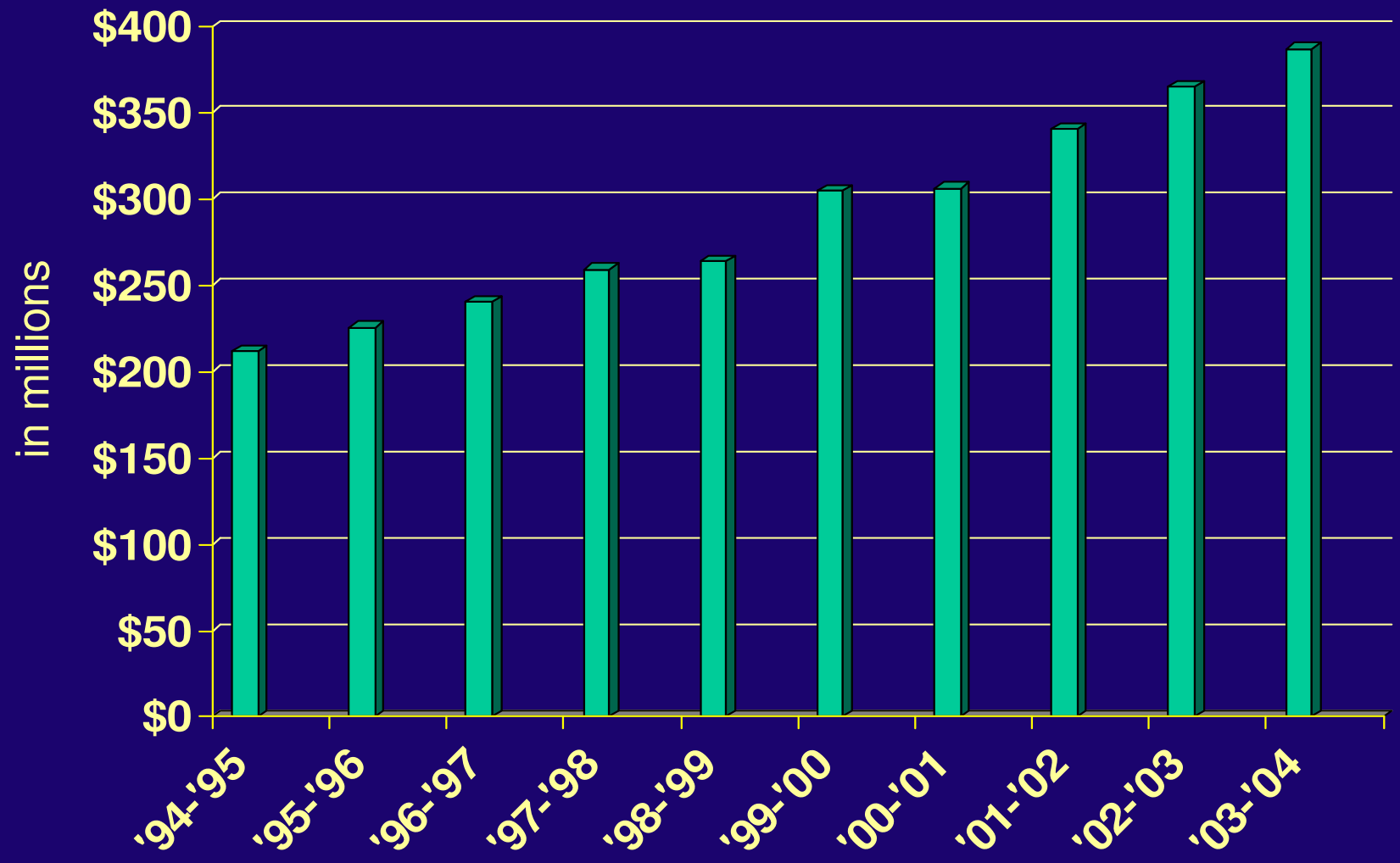
THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

Academy members

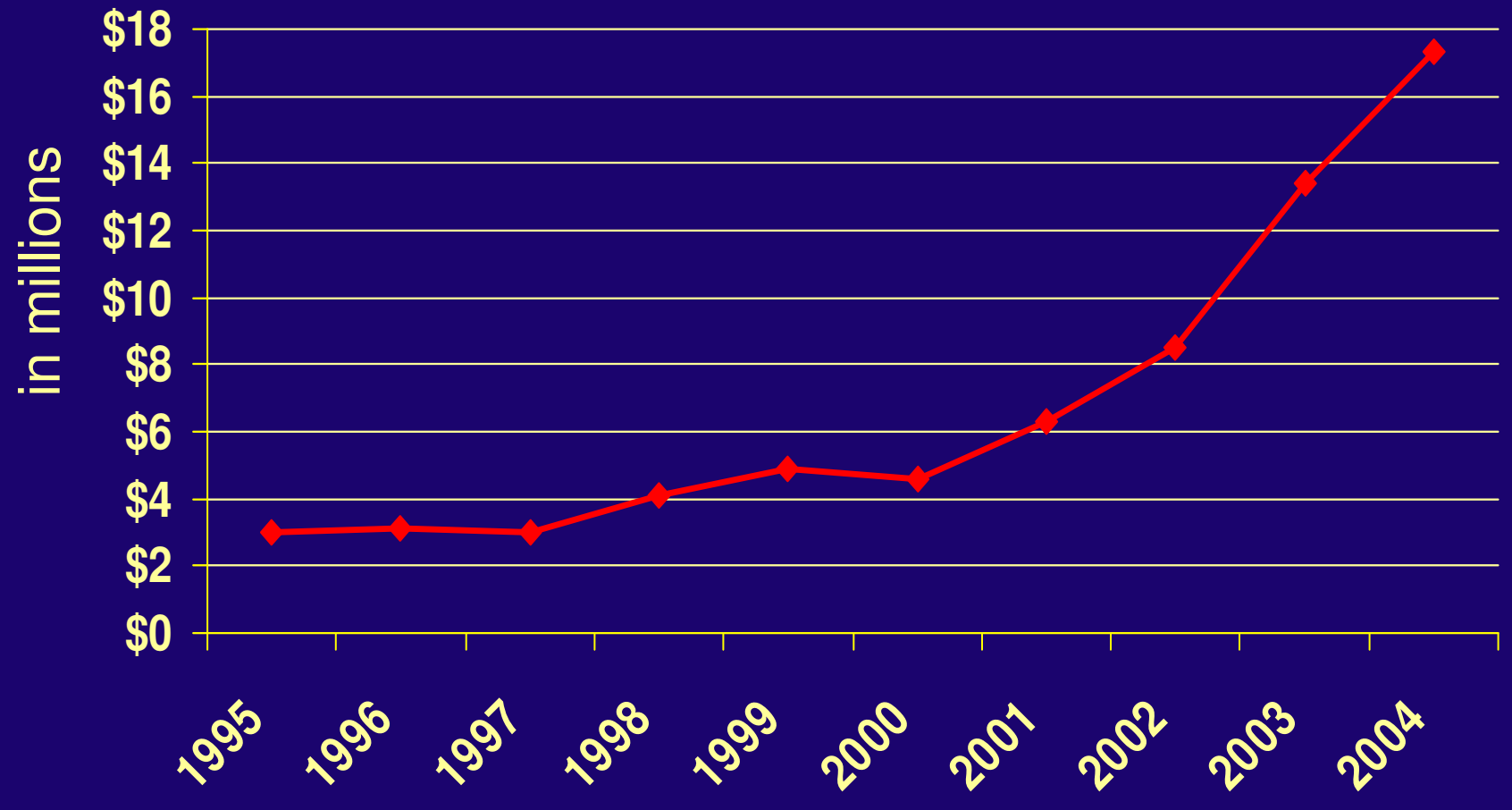
1995: 13

2004: 30

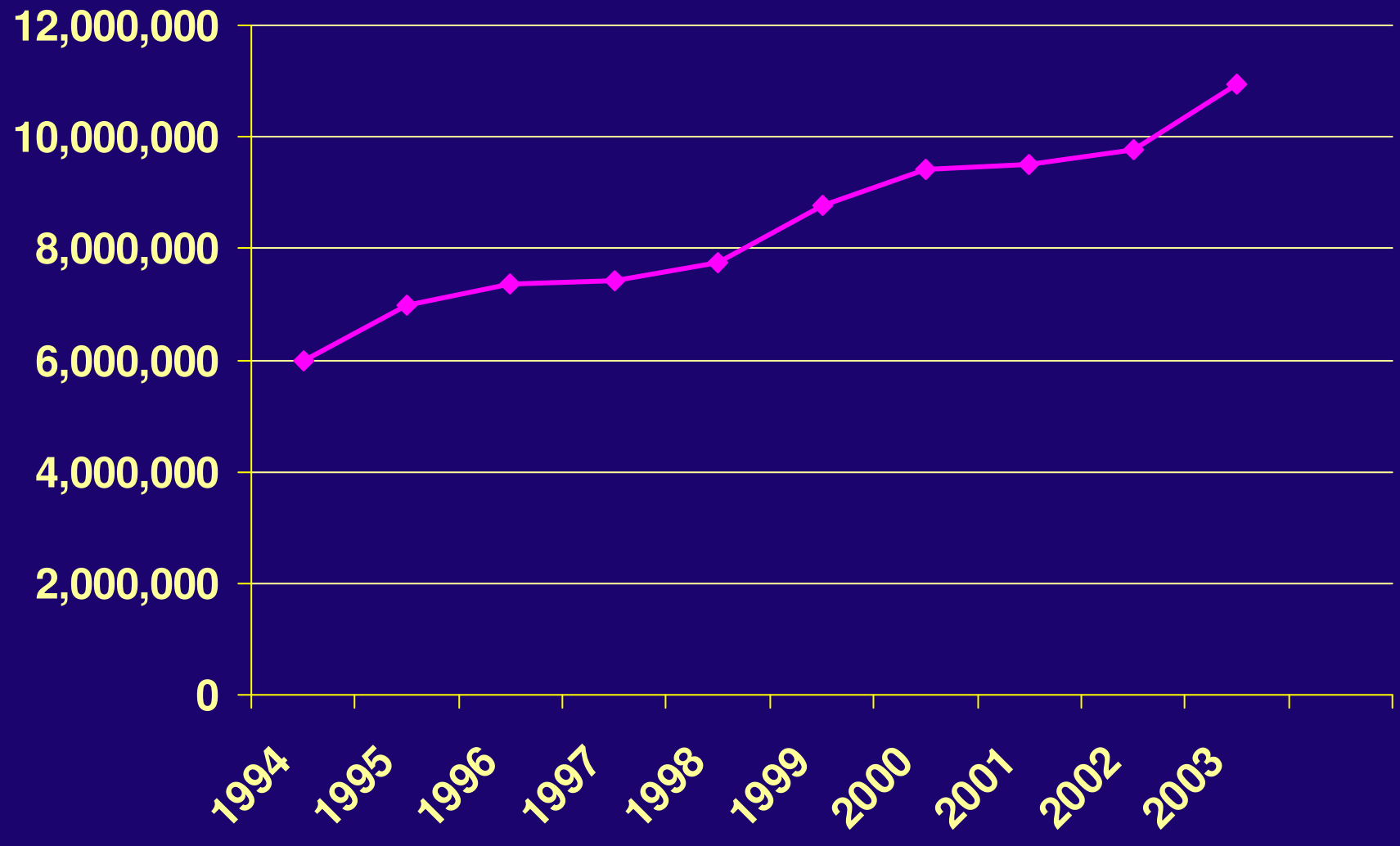
Research expenditures



NIH research awards

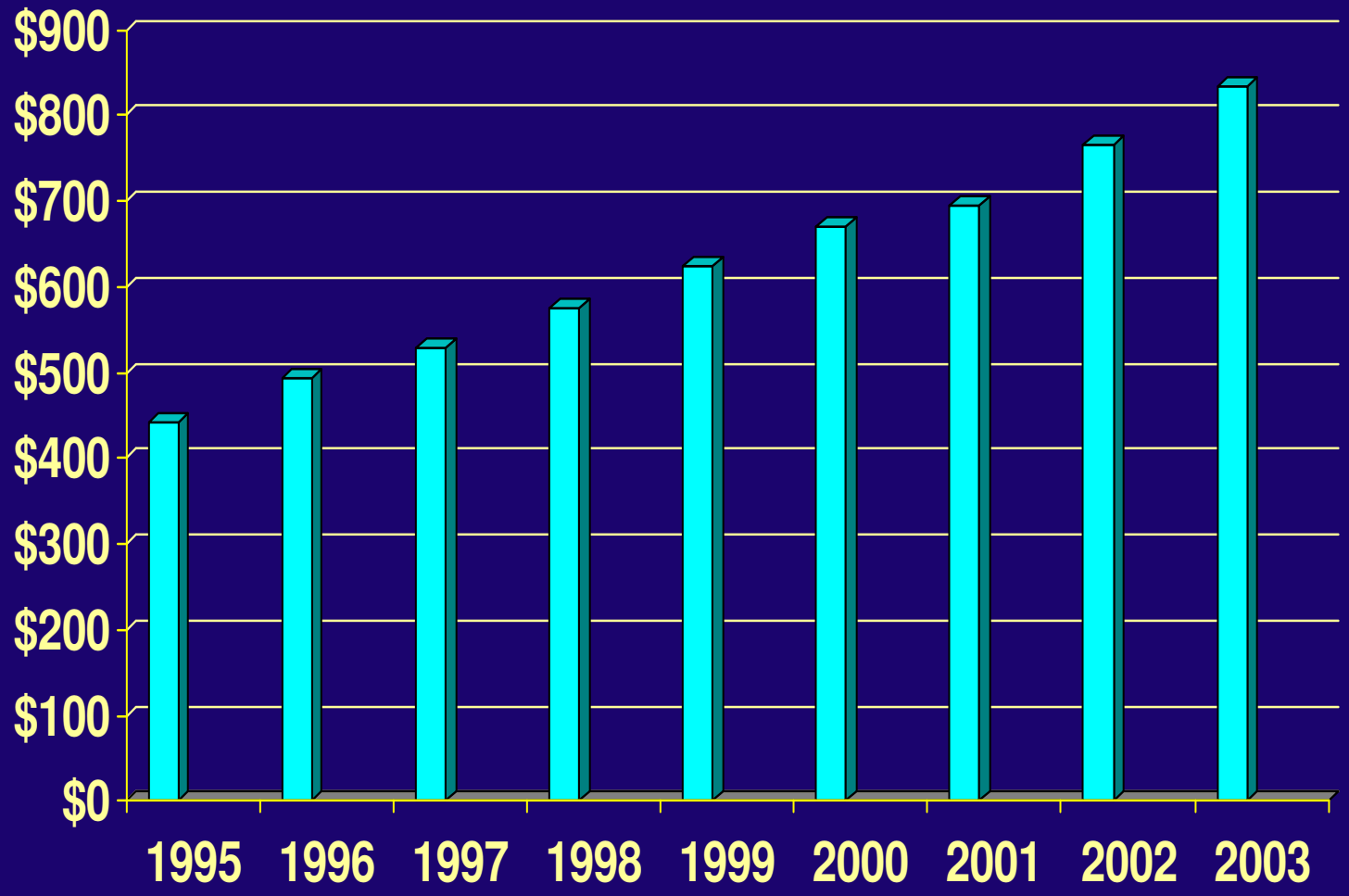


Square footage

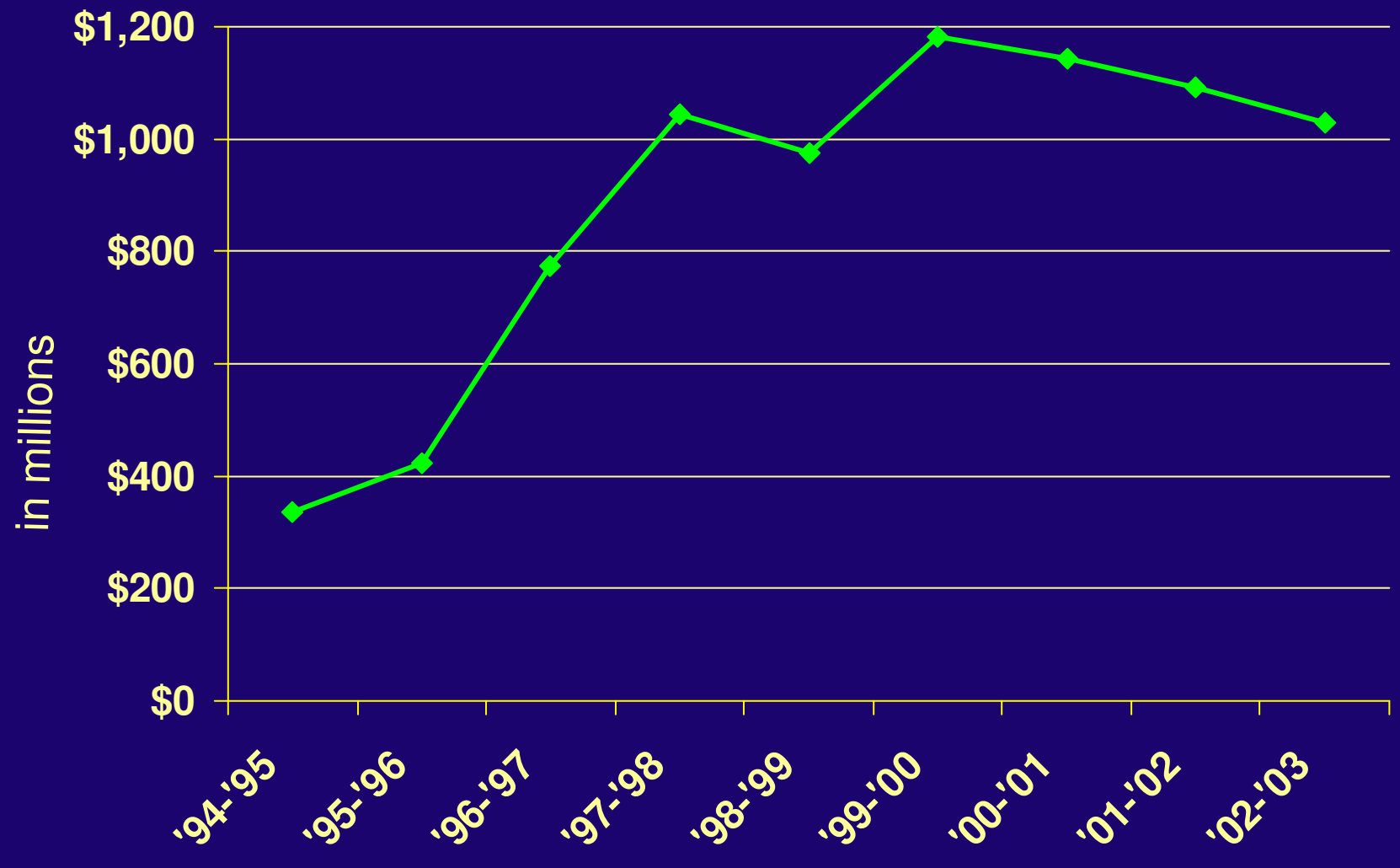


Budget expenditures

(in millions)



Endowment value



Looking back 20 years

- First megabit chip made
- PCs, CDs are the hot new technology
- AIDS newly diagnosed
- Major competitor: Japan
- No commercial Internet
- No cell phones
- No dot-com economy to boom or bust
- No terrorism threats

Looking back to the future

"We construct the future by some kind of extrapolation in which the past is prologue, and the approach to the future is backward-looking."

O.A. El Sawy
quoted in *Exemplary Leadership*

Looking ahead 20 years

- ⇨2 billion more people
- ⇨Fresh water shortages
- ⇨Rising energy demands
- ⇨Global warming
- ⇨New diseases?
- ⇨Increasing terrorism?
- ⇨A biotech revolution?
- ⇨A nanotech revolution?

Future world trends

- ⇨ Aging population in developed world vs. “youth bulge” in Africa, Asia
- ⇨ Growing strength of universities, workforce in India and China
- ⇨ Globally dispersed “round the clock” teams of employees

Expecting the unexpected

"It is difficult to predict which fringe elements will remain in obscurity and which will change the world."

Peter Schwartz, futurist
The Art of the Long View

Characteristics of ground-breaking innovations:

- Global
- Multidisciplinary
- Transformational
- Spark other innovations
- Emergence / openness

National Innovation Initiative
Draft report

Future GT challenges

- ⇨Declining % of budget from the state; growing alternative sources of funding
- ⇨Strengthening non-engineering programs while maintaining prominence in engineering
- ⇨Addressing growing competition with other universities for best students
- ⇨Improving retention/graduation
- ⇨Need to improve diversity at all levels

Future GT opportunities

- ⇨Wave of new technologies
- ⇨Leadership position in interdisciplinary fields
- ⇨Leadership role in international platforms
- ⇨Potential for growth in biotechnology/ biomedical arena
- ⇨ High performance computing and networking (ORNL, NLR)
- ⇨Leadership in diversity

Why is leadership especially important for GT?

- ⇨New competitor in the major leagues with others who have been there a long time
- ⇨Competitors are not standing still – they expect newcomers to fade
- ⇨Times are more complex, changing more rapidly
- ⇨Sustaining positive momentum in an environment of lean resources

Core values for leadership

Exemplary Leadership:

- Model the way
- Inspire a shared vision
- Challenge the process
- Enable others to act
- Encourage the heart

4 more for Tech:

- Integrity
- Innovation
- Diversity as a strength

Context is everything

- Local
- Regional
- National
- International

Introducing a great leader

Jack Guynn

President and CEO,
Federal Reserve Bank of Atlanta
Member,
Federal Open Market Committee
Georgia Tech alumnus

Community activities:

- Oglethorpe University
- Atlanta Midtown Alliance
- Piedmont Park Conservancy
- Carter Center
- Atlanta Rotary Club
- Boy Scouts
- United Way